TECHNOLOGY FOR THE METALS INDUSTRY

SARCLAD

Sarclad is a dynamic global company providing advanced technology products to the metals industry.

At Sarclad, our ultimate goal is to become a world leader in the metals industry with advanced, top-tier technology. We were established in 1977 and excel at providing valuable and enhanced technical solutions for our customers.

To achieve this goal, we have continuously pushed limits of innovation, reliability and value to become the best. Being unmatched in the industry does not happen without listening to our customers' needs and developing cutting-edge solutions. Performance, productivity and safety are key criteria which we do not compromise on delivering across our product range.

Sarclad headquarters are in Sheffield in the UK, where our specialist teams individually design and manufacture each bespoke customer order.

In addition to the UK, we have highly skilled service engineers in each of our regional hubs (China, United Sates & India) to meet our customers needs from initial concept, through to delivery of aftersales, parts and service.

Sarclad is a proud member of The Heico Companies, which successfully operates over 70 companies across 5 continents.

THE HEICO COMPANIES LLC

MADE IN SHEFFIELD

Sarclad at a glance.

4 service hubs

80+ team members

50+ countries serviced

50 years of experience

1000+ installed systems worldwide

1977 — Sarclad founded

1980 — Delivery of the first Rollscan

1981 — Opening of Sarclad North America

1988 — Delivery & Installation of first EDT machine

1988 — Delivery & Installation of first SCM machine

2000 — Sarclad is acquired by The Heico Companies

2012 — Opening of Sarclad China

2015 — Opening of Sarclad India

2018 — Installation of first ECO EDT machine

2018 — Digital Rollscan is launched

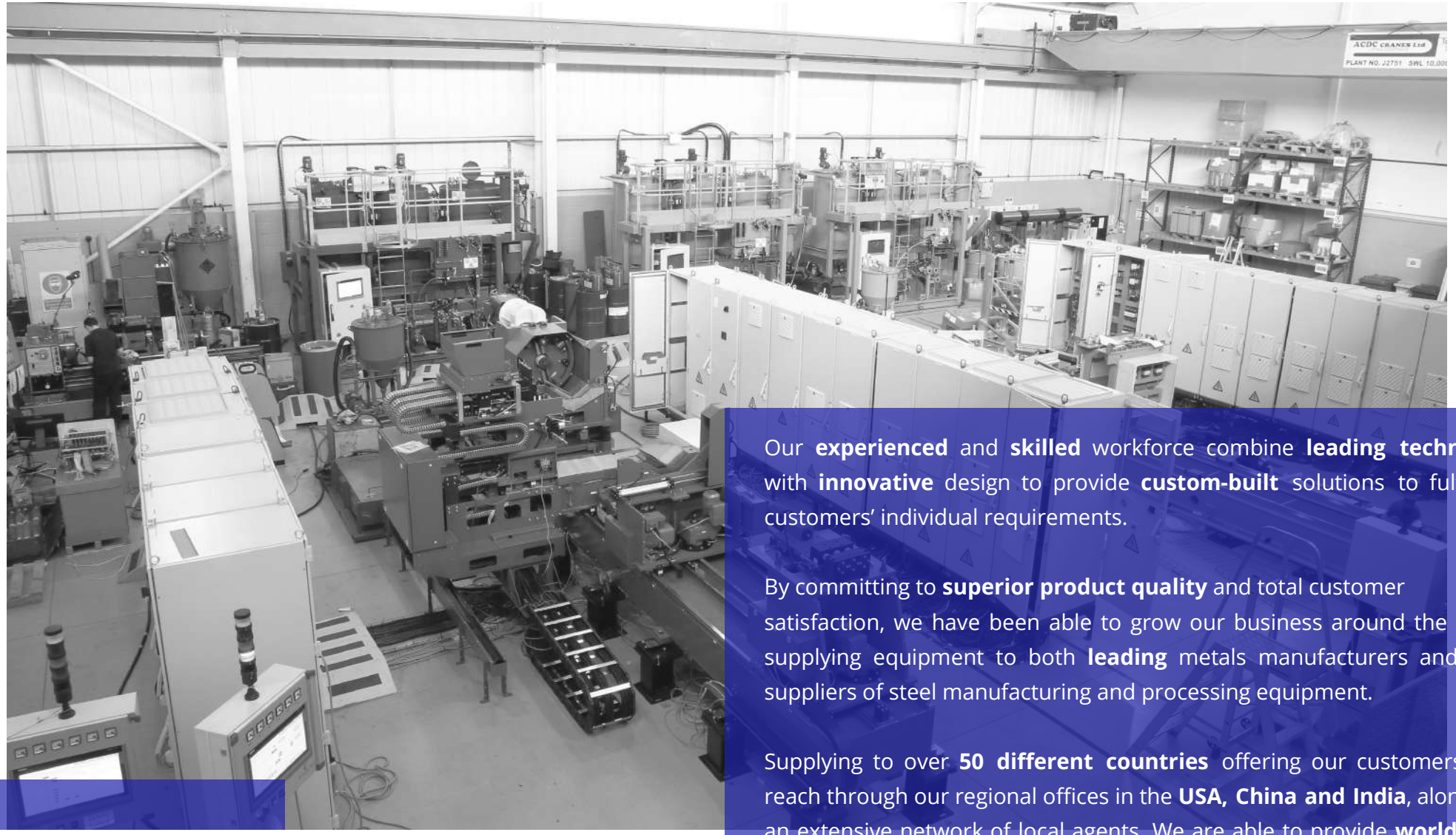
2021 — Installation of first SCM In-Chain Caliper

2022 — EDT MSA is launched

2023 — Contamination Monitoring System is launched

2023 — Installation of first EDT MSA

“At Sarclad we understand that our future is built on our performance to our customers today, and our ability to continually push boundaries going forward.



Our **experienced** and **skilled** workforce combine **leading technology** with **innovative** design to provide **custom-built** solutions to fulfil our customers' individual requirements.

By committing to **superior product quality** and total customer satisfaction, we have been able to grow our business around the world, supplying equipment to both **leading** metals manufacturers and **OEM** suppliers of steel manufacturing and processing equipment.

Supplying to over **50 different countries** offering our customers local reach through our regional offices in the **USA, China and India**, along with an extensive network of local agents. We are able to provide **world class** products, services and support with **total confidence**.

A new era in technology

Established in 1977, Sarclad's continuing goal is to be the world leader in the provision and support of unique technologies and solutions for the metals industry. To achieve our vision, we continue to enhance our market leading products to consistently satisfy client expectations. We continue to actively develop new products that offer the same best in class solutions in order to extend the areas in which we can assist the metals industry to become more productive and profitable.
Our employees are empowered to be responsible and proactive in their everyday activities, creating a culture of striving for and achieving excellence in all aspects of the business.

Never compromising on our commitment to health and safety, quality, or environmental responsibility, Sarclad is a business that encourages creative thinking, and we have built a strong, passionate team that develops innovative products and solutions for the future of the industry.

Having been associated with Sarclad for over 25 years I have seen the company grow and develop, and I am proud to now be leading the business forward into a new era, creating customer focused solutions for businesses the world over.

Richard Cowlishaw
Managing Director

Rollshop Technology

EDT Roll Texturing

Sarclad is proud to be the world leader in EDT (Electro Discharge Texturing) by continuing to push the boundaries of what is possible in roll texture performance and control.

We have the widest range of units to select from, ensuring that we can offer a bespoke fit for any requirement

Please refer to our **EDT range selector** overleaf and our **EDT Buyers Guide** for more information.

sarclad.com/knowledge

Roll Inspection

Sarclad Rollscan inspectors are successfully installed worldwide, detecting both surface & subsurface defects and ensuring roll fleets are maintained in safe and optimum condition. 3 technologies are available for selection:

Eddy current - For surface defect and bruise detection.

Creep/Surface Wave UT - To detect non surface breaking defects, just below the surface.

Compression Wave UT - For detection of issues deep into the core of the roll.

Rollscan units may be integrated with the grinder or operated on a stand alone basis. Applications:

- Hot mill roll shop
- Cold mill roll shop
- Work rolls
- Back up rolls
- Forged rolls
- Cast rolls

Rolltex® EDT
Roll Texturing

Advantages of Rolltex EDT

- 4 variants to choose from, ensuring best fit solution with your demand & budget
- Proven technology supported by our aftersales & highly skilled service engineers around the world
- Duplex feature to control waviness comes as standard
- EDC (electrical discharge coating) is available as standard to increase roll hardness/longevity

At a glance.

120+ systems installed

In house design & engineering expertise

Roll shop management system compatible

Unrivalled texture control performance

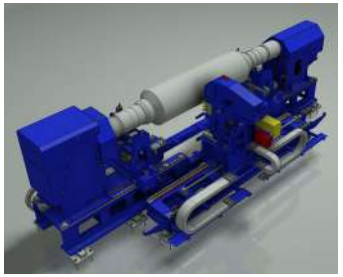
Electro Discharge Texturing.
World leading technology for applying texture to rolling mill rolls.

Sarclad Rolltex EDT machines deliver a fast and reliable process to provide surface textures on cold mill rolls to outstanding accuracy and consistency. This is achieved with lower operating costs and improved environmental conditions compared to other texturing processes such as shot or grit blasting. Advanced electronic control enable independent selection of surface roughness (Ra) and Peak Count (PC) values over a wide range of roll textures, to suit a vast range of applications. Waviness (Wa) values are maintained well within the limits specified by major automotive companies.

With texture ranges from Ra 0.5 to 15 µm, regardless of roll hardness, the most stringent requirements for coated and uncoated strip qualities can be satisfied. Machines of various sizes and specifications operate continuously to provide textured rolls for Tandem, Temper, Skin pass, Sendzimir, reversing mills and speciality strip producers.

Integrated automatic roll loaders and roll shop management systems, help support texturing capabilities of +1000 rolls/ month.

EDT Range Selector

	MSA (Multi Servo Array)					MRV (Moving Roll Variant)					MSV (Moving Saddle Variant)					ECO
																
Distinguishing Features	Individual electrode control. Texture head array design. Texture head remains static. Roll is traversed to texture head					Texture head remains static. Roll traverses to texture head. Electrodes controlled in groups of 12 by single servo					Roll remains static. Texture head is traversed from one end of roll to the other. Electrodes controlled in groups of 12 by single servo					Semi automated
Advantages	Unrivalled texture roll control and efficiency across Ra and peak count range. 99% texture efficiency. Grind defect removal. Speed & capacity					Proven reliability for precision control and stability					Can be built on platform with minimum foundations. Requires smaller footprint than MRV					High capacity utilisation for low demand applications
Target Segments	Exposed automotive panels. Aerospace. High volume mills					Strip for wide variety of end markets including Packaging, White goods, Construction and Automotive					Strip for wide variety of end markets including Packaging, White goods, Construction and Automotive					Aluminium and low volume steel mills
Roughness Range	0.5 - 15					0.5 -15					0.5 -15					0.5-15
Roll Diameter Range	200 -850mm					200 - 800mm					200 - 800mm					200 -800mm
Roll Barrel Length	500 - 3000mm					500 -3000mm					500 -3000mm					500-3000mm
No. of Electrodes	12	24	36	48	72	12	24	36	48	72	12	24	36	48	72	12
Capacity (Roll p.a. approximate)	3438	5313	6875	8438	10625	2750	4250	5500	6750	8500	2750	4250	5500	6750	8500	1000
Texture Time (mins) 1650 x 450 @ 2.5 Ra	80	0	38	0	27	100		48		34	100		48		34	100
Expandable	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No
Consumable Cost Per Roll ($)	13.6	12.9	12.4	12.0	11.6	14.0	13.3	12.8	12.4	12.0	14.0	13.3	12.8	12.4	12.0	13.6

Rolltex® EDT MSA

State of the art Roll Texturing

Featuring the very latest advance in Electrical Discharge Technology, delivering surface textures for mill rolls, which satisfy even the most stringent demands on texturing performance, quality and consistency.

The Rolltex Multi Servo Array is Sarclad's state-of-the-art, premier EDT offering. The MSA delivers unmatched roll texture control for surface critical strip applications such as automotive external panels. The ground-breaking texturing efficiency generated by MSA technology enables unrivalled accuracy, speed and consistency of surface texture on the roll and ultimately on the strip. Sarclad Rolltex MSA is the ideal choice for flagship aluminium and steel plants looking to increase volume and control of surface-critical strip into applications such as automotive, white goods, packaging and aerospace.

Today's leading steel and aluminium rolling mills need to consistently produce high quality textured strip to satisfy increasing stringent demand from surface critical market sectors. Sarclad successfully launched the next generation of EDT technology in Spring 2022, featuring a Multi-Servo Array (MSA) texture head.

MSA delivers a step change in texturing performance versus standard EDT as follows:

- **30% Higher Peak Counts (RPc)**
- **25% Better consistency**
- **30% Faster texture times**
- **Longer roll campaigns with EDC**

Advantages of Rolltex MSA

- New Power Delivery System—closed-loop current control
- Unique texture head array design
- All 36 electrodes in each array **individually controlled**
- Electrodes work together as a team, avoiding risk of stripes or bands if one electrode fails
- Digital Servo control

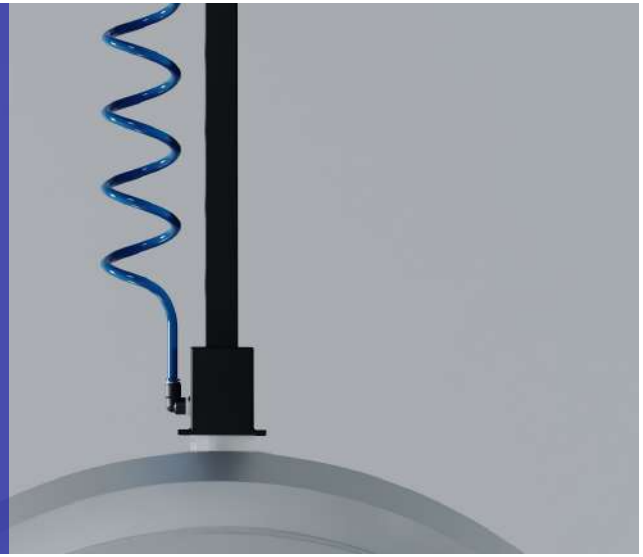
Rollscan®
Non-Contact Roll Inspection

At a glance.

600+ systems installed

30+ countries

50 combined years



Optimising the inspection process for defect-free rolls with robust & proven technology.

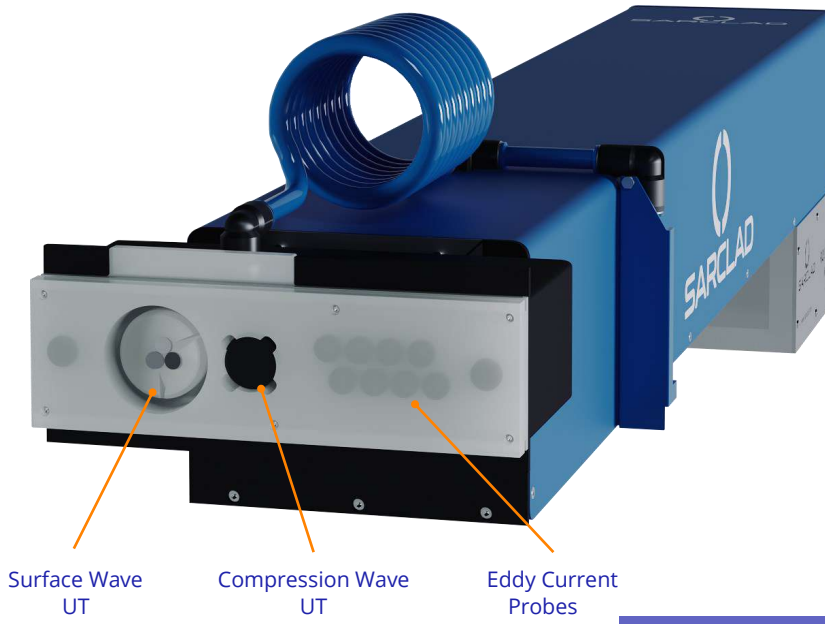
Sarclad takes immense pride in providing the best technology and products to our customers. Rollscan is our leading roll inspection brand. Providing the measurement data you need to manage the longevity, safety and quality of your roll fleet.

Rollscans are prevalent across the global steel industry in both hot and cold rolling mills, providing inspection data to guide the grinding process across both work and back up rolls. It identifies the depth and location of any defects in the roll above the set threshold.

It enables data driven grinding, allowing the grind depth to be set to the level necessary and avoiding the removal of any unnecessary wear of the roll. Our customers find that the payback on a Rollscan investment is typically less than 1 year, due to greater longevity of roll life, improved rolling quality and less unplanned maintenance due to roll issues. Rollscan's are increasingly popular in the aluminium rolling industry also, for flat product applications such as Automotive.

Advantages of Rollscan

- Real-time roll condition evaluation
- Fully automated operation and defect analysis
- Increased roll life
- Unrivalled Aftersales support for spares & service
- One test head - straight forward to operate
- Unrivalled product longevity & customer loyalty



Coil Processing

CMS
Contamination Monitoring System

At a glance.

State of the art

laser technology **(LIBS)**

A New Era

of cleanliness control

The first continuous monitor of strip cleanliness providing real time data with unprecedented precision that distinguishes between oil and iron fines contamination.

The new Sarclad CMS is an innovative contamination monitoring system which utilises Laser Induced Breakdown Spectroscopy (LIBS) to provide strip producers and line manufacturers with an automated, non-contact, online measure of very low levels of iron fines and carbon contamination on coils after the cleaning section on the galvanising line.

The ability to have real time quantitative data for every coil will ensure an effective and timely monitor of process drift, allowing correction before process issues arise. The recording of coil to coil variation will facilitate process improvement to reduce variability and improve product quality.

The unique ability to distinguish between oil and iron fines will allow steel strip galvanisers to target the core parameters of each component of the cleaning section to ensure the highest product quality and optimise overall process efficiency.

Advantages of the CMS

- The only system that can differentiate the measurement of iron fines & oil
- Continuous & real time data
- Enables higher & more effective control of maintenance
- High sensitivity:
  - **Oil: 1mg/m2**
  - **Iron fines: 2mg/m2**

Caster Monitoring

Off-line Caster Measurement

On-line Caster Measurement

Our Caster Monitoring Systems are built to measure the slab and the bloom cast to provide reliable and current data. The machines provide rapid and accurate measurement using assessment of critical strand parameters producing high quality steel.

Sarclad's Strand Condition Monitor (SCM) is widely recognised as the world's leading **off-line** continuous slab caster measuring systems, which provide rapid and accurate measurement and assessment of critical strand parameters essential for the production of high quality steel.

Strand condition measuring systems are installed onto the dummy bar chain in place of the dummy bar head and are passed through the caster strand during machine outages. Measurements are collated and recorded automatically from on board sensors which is then downloaded via a cable or Wi-Fi to a laptop for analysis and presentation.

Please check out our website for further information.
sarclad.com/caster-monitoring

The In-Chain Strand Condition Monitor is a precision **on-line** measurement system for continuous casting machines. Each In-Chain SCM system is designed for seamless integration with the continuous casting process, providing caster roll gap measurements during the start of every cast sequence, enabling a combination of greater productivity & measurement control.

The Sarclad caster monitoring systems compliment each other by combining the multiple measurements offered by the off-line SCM with the increased measurement frequency offered by the In-Chain SCM. Using both systems offers the most comprehensive caster monitoring solution, allowing the end user to identify existing problems and also prevent future failures.

At a glance.

350+ systems installed

40 countries

35+ combined years

SCM

Off-line Continuous Caster Measurement

The original Strand Condition Monitoring systems for continuous slab casting.

The comprehensive range of measurements offered by SCM systems include; Roll gaps, roll and segment alignment, outer roll condition, roll bend, roll rotation and water spray analysis.

With the use of these systems, mechanical caster strand parameters can be monitored and maintained to ensure that quality cast slabs are efficiently produced, while sub-standard and scrap product is reduced.

Bloom SCMs are compatible with medium to large bloom casters with a section size of 250mm² /10" and above. The use of an SCM enables the end user to monitor and maintain the mechanical caster strand parameters and hence assist in the efficient production of quality bloom products.
Sarclad can design, supply and install strand condition monitors for these medium/large Bloom casters offering a comprehensive range of caster measurements.

Advantages of the Sarclad SCM range

- Uniquely designed for each individual caster
- Caster thickness measurements from 55mm to 450mm+
- Accurate and repeatable measurements
- Improved slab quality
- On-line & off-line solutions available
- Can be upgraded

Bloom SCM

In-Chain SCM

On-line Continuous Caster Measurement

At a glance.

70mm gap measuring range

+/- 0.15mm accuracy

0.5 to 2.5m/min typical measuring speed

Advantages of the In-Chain SCM

- Roll gap measurement for every cast sequence (RFT)
- Planned maintenance can be reduced and data driven
- Maximise productivity and control
- Off-line SCM can be used during down periods for wider checks

Provides rapid & accurate measurements of the critical strand parameters for bloom casting.

Permanently installed into existing dummy bar chains, the In-Chain SCM measurements are performed automatically at the start of every cast, to provide quality critical roll data.

To integrate seamlessly into existing production activities, the Sarclad In-Chain Strand Condition Monitor system offers fully automated functions including data collection, wireless data transfer, analysis & presentation of results and fully automated, contactless battery charging.

Performing frequent caster measurements without interrupting the production schedule allows the end user to plan preventative maintenance activities, maximise the casting process efficiency and significantly improve caster performance.

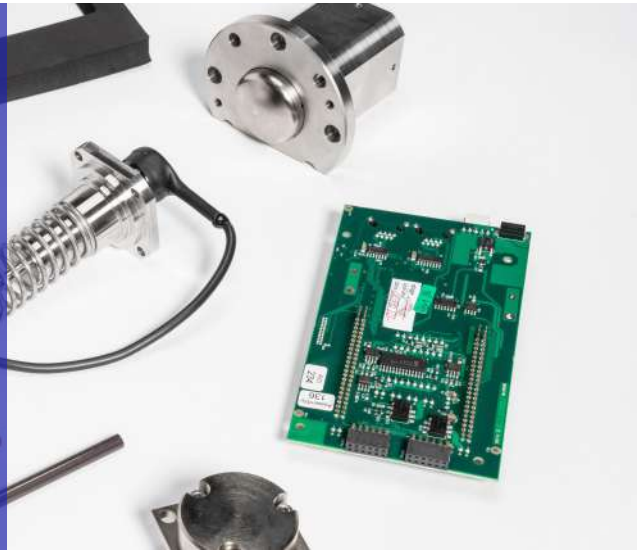
Sarclad Aftersales

At a glance.

45+ years of experience

45+ countries

Local support



We are proud of our history and reputation for providing high quality, reliable products that enable our customers to receive the best value and performance for their investment.

Due to the ever increasing demands for quality in the metals industry, it is of the highest importance that your Sarclad product continues to operate as accurately and efficiently as the day it was first commissioned.

Sarclad has a dedicated Customer Service team, offering you the support and the peace of mind that you deserve. Should you require assistance due to a machine related issue or have a service enquiry, our Customer Service team are here to support you throughout the process.

Our team of highly qualified and skilled engineers support you throughout the lifetime of ownership of your Sarclad equipment, providing expert advice and services that keep your business moving. Our in-house team of specialists based in the UK are able to provide support as required and can be accessed directly through our Customer Service Department.

Available Services

- Annual service and maintenance contracts
- Operator and maintenance training
- Emergency breakdown support
- Telephone and web support for operation advice, data interpretation and fault diagnosis
- Supply of spares and consumables
- Through life product support with upgrade and improvement options
- Technical support for special requirements or product development upon request

Spares

Service

Consumables

Remote Support

Locations

Sarclad UK | Head Office

A bird's-eye view of Sarclad HQ nestled in the heart of the thriving Advanced Manufacturing Park on the outskirts of Sheffield. Our 28,000 sq ft facility is home to over 60 employees, where we design, build, test and deliver our full range of technology products for the metals industry around the globe. We also support and service our customers from strategically positioned offices in Pittsburgh - USA, Shanghai - China & Bangalore - India.

Sarclad North America

Pittsburgh, PA

Our office in Pittsburgh PA was opened to serve our expanding customer base in the USA. We continue to operate from this area – the home of American steelmaking.

Sarclad China

Shanghai

To support our activities in the rapidly expanding Chinese steel sector, Sarclad opened an office in Shanghai. We lead the market in China for EDT machines thanks to our focus on providing increasingly sophisticated texturing technology to the key steel producers – in turn allowing them to supply high quality steel product to the world's leading auto manufacturers.

Sarclad India

Bangalore

Sarclad has been active in India for many years and supplies equipment to all the major steel producers. The opening of an office in Bangalore was a natural progression to allow us to better serve these customers and to continue to grow our business activity across the subcontinent.


SARCLAD
TECHNOLOGY FOR THE METALS INDUSTRY